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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,052	10/15/2003	Adam Jude Ahne	2003-0115.02	7000

21972 7590 12/22/2006  
LEXMARK INTERNATIONAL, INC.  
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740 WEST NEW CIRCLE ROAD  
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LEXINGTON, KY 40550-0999

EXAMINER
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TRA, ANH QUAN

ART UNIT	PAPER NUMBER
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2816

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/22/2006	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

**Application No.**

10/686,052

**Applicant(s)**

AHNE ET AL.

**Examiner**

Quan Tra

**Art Unit**

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 October 2006.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 and 24-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/15/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of group II, claims 12-23, in the reply filed on 10/30/06 is acknowledged.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 12 and 14-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carpenter, Jr. et al. (USP 6469884) in view of Yamazaki et al. (USP 5180967).

As to claim 12, Carpenter, Jr. et al.'s figure 1 shows a fuse sensor, but fails to show the detail of the current source that coupled to circuit 12. However, Yamazaki et al.'s figure 2 shows a constant current source. Therefore, it would have been obvious to one having ordinary skill in the art to use Yamazaki et al.'s current source for Carpenter, Jr. et al.'s current source for the purpose of providing a constant current source to the circuit. It is noted that Yamazaki's V<sub>dd</sub> is now Carpenter's V<sub>cp</sub>. Thus, the modified Carpenter's figure 1 shows: a first transistor (MN<sub>read</sub>) defining a read input for receiving a read signal, a first terminal coupled to the fusible link (F1), and a second terminal coupled to an output port; and a second transistor (Yamazaki's 216) having a bias input biased to a voltage reference (V<sub>cp</sub> via 206, 214), having a third terminal coupled to the second terminal of the first transistor, and a fourth terminal coupled to a ground.

As to claims 14-21, the modified Carpenter's figure 1 fails to show that an output voltage at the output port in a range of about 1 volt to about 2.5 volts or about 1.5 volts signifies that the

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fusible link is opened; or an output voltage at the output port indicates that the fusible link is opened when the fusible link has a resistance in a range of about 1 k ohms to about 2 k ohms, about 15 k ohms to about 30 k ohms, about 1 k ohms, 2 k ohms, 17 k ohms, or 27 k ohms. However, The selection of the above values is seen as an obvious matter of preference bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization because applicant has not disclosed that the limitation is for a particular unobvious purpose, produce an unexpected result, or is otherwise critical, and it appears prima facie that the process would possess utility using another relative frequency. Indeed, it has been held that optimization of range limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See MPEP 2144.05(II). Therefore, it would have been obvious to one having ordinary skill in the art to select the output voltage value (by selecting supply voltage  $V_{cc}$  or the size of the transistors) or the opened fuse resistance value to be one of the above values dependent upon particular environment of use to ensure optimum performance.

As to claim 22, the modified Carpenter's figure 1 shows a third transistor ( $M_{nmain}$ ) having an input terminal coupled to the voltage reference (via the current source), having a fifth terminal coupled between the fusible link and the first terminal of the first transistor, and having a sixth terminal coupled to ground.

As to claim 23, it is known that ink jet printhead and an ink jet printer has fuse sense circuit. Therefore it would have been obvious to one having ordinary skill in the art to use the modified Carpenter's figure 1 in ink jet printhead and an ink jet printer for the purpose of provide better protection for the ink jet printhead and an ink jet printer.

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carpenter, Jr. et al. (USP 6469884) in view of Yamazaki et al. (USP 5180967) and Erstad (USP 6833749).

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The modified Carpenter's figure 1 further fails to show the detail of circuit 12. However, Erstad's figure 2 shows a Schmitt trigger circuit having low noise. Therefore, it would have been obvious to one having ordinary skill in the art to use Erstad's Schmitt trigger circuit for Carpenter's Schmitt trigger circuit for the purpose of reducing noise. Thus, the modified Carpenter's figure 1 further shows an inverter circuit (Erstad's 230) coupled between the second terminal of the first transistor and the output port.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan Tra whose telephone number is 571-272-1755. The examiner can normally be reached on 8:00 A.M.-5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



QUAN TRA  
PRIMARY EXAMINER  
ART UNIT 2816

December 12, 2006